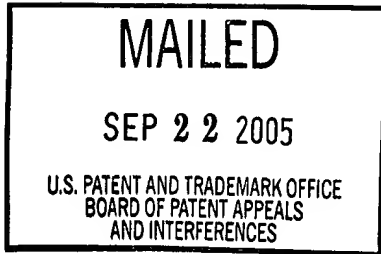


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte YOSHIHITO ASAO

Appeal No. 2005-1185
Application No. 09/277,198

HEARD: September 15, 2005

Before KRASS, BLANKENSHIP, and SAADAT, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-4.

We affirm.

BACKGROUND

The invention relates to a stator for an automotive alternator. Representative claim 1 is reproduced below.

1. A stator for an automotive alternator comprising:

a stator core having a plurality of slots; and

a preformed stator coil including a cluster of three phases of connected stator winding having;

axially parallel portion [sic; portions] which are substantially parallel to the central axis of said stator coil, said axially parallel portions comprising current generating portions disposed within said slots of said stator core and generating electric current, and projecting portions which project from the axial ends of said slots; and

bridge portions comprising circumferential portions connecting said axially parallel portions to each other within each of said three phases of windings;

wherein inner circumferential surfaces of said bridge portions are placed at least close to the axial end surfaces of said stator core in the direction of the central axis of said stator core, so that the spatial ratio occupied by said stator windings belonging to said bridge portions exposed beyond said axial end surfaces of said stator core, has a high density.

The examiner relies on the following references:

| | | |
|-------------------------------------|-----------|---------------|
| Schönfelder | 2,235,903 | Mar. 25, 1941 |
| King | 3,531,672 | Sep. 29, 1970 |
| Adachi et al. (Adachi) ¹ | 9-103052 | Apr. 15, 1997 |

¹ Japanese Kokai with English translation provided by the USPTO, October 2001.

Appeal No. 2005-1185
Application No. 09/277,198

Claims 1 and 4 stand rejected under 35 U.S.C. § 103 as being unpatentable over Adachi and King.

Claims 2 and 3 stand rejected under 35 U.S.C. § 103 as being unpatentable over Adachi, King, and Schönfelder.

Claims 5-15 have been withdrawn from consideration.

We refer to the Final Rejection (mailed Jun. 11, 2002) and the Examiner's Answer (mailed Aug. 15, 2003) for a statement of the examiner's position and to the Brief (filed May 30, 2003) and the Reply Brief (filed Oct. 15, 2003) for appellant's position with respect to the claims which stand rejected.

OPINION

Appellant submits that claims 1-4 stand or fall together (Brief at 5), and argues the limitations of sole independent claim 1. We select claim 1 as the representative claim in our review of the rejection of claims 1 and 4. See 37 CFR § 1.192(c)(7) (2002).

Appellant argues that Adachi in combination with King does not disclose, teach, or suggest a preformed stator coil with bridge portions placed at least close to axial end surfaces of the stator core. (Brief at 7.)

Original claim 1 recited that the inner circumferential portions of the bridge portions are placed "in contact with" the end surfaces of the stator core without any gaps in the direction of the central axis of the stator core. When asked about support

in the original disclosure for the broader “at least close” aspect of instant claim 1, appellant’s counsel at the oral hearing referred us to page 10, lines 10 through 17 of the specification. The paragraph states that the inner circumferential surfaces 921c (Fig. 8) of the bridge portions 921b are formed “so as to be in contact with” the end surfaces 91b of the stator core 91 without any gaps in the direction of the central axis of the stator core 91, consistent with the language of original claim 1. The next sentence of the specification notes that, consequently, the stator coil 92 consists “substantially” of current generating portions 921a1 and bridge portions 921b only, with few or no projecting parallel portions 921a2.

If we interpret the “at least close” feature in the context of instant claim 1 consistent with the embodiment in the specification, the language would seem to indicate that the stator coil consists substantially of current generating portions and bridge portions only; i.e., that all or almost all of the inner circumferential portions of the bridge portions are placed in contact with the end surfaces of the stator core without any gaps in the direction of the central axis of the stator core. Because the scope of a claim is not normally limited to the details of the disclosed embodiments, however, the extent of what also may be considered “at least close” is unclear on this record.

In any event, the examiner finds that Adachi fails to disclose that the inner circumferential surfaces of the bridge portions “are placed close” with the axial end

surfaces of the stator core. (Answer at 4.) The examiner does not specify the basis in the reference for the finding.

The final paragraph of page 5 of the instant specification refers to a method of manufacture for a stator described in "Japanese Patent Laid-Open No. HEI 9-103252." Japanese published application HEI 9-103252 does not appear to be related to the instant invention. We suspect that the reference described in the specification is Adachi -- i.e., presently applied 9-103052 -- particularly in view of the similarities in drawings (e.g., instant Prior Art Figure 10 as compared with Adachi Figure 1). Appellant's counsel at the oral hearing conceded that the above-noted specification section may be referring to Adachi.

The basis for the examiner's finding with respect to the inner circumferential surfaces of the bridge portions being not "placed close" with the axial end surfaces of the stator core might be Adachi's drawings. Figure 1 of Adachi, for example, appears to show gaps between coiled wire group 52 and stator iron core 51, as compared to instant Figure 2. However, Adachi's disclosure does not reveal that the drawings are to scale, or otherwise intended to depict the structures with precision -- i.e., the precision required to impart manufacturing specifications. Cf. In re Wright, 569 F.2d 1124, 1127, 193 USPQ 332, 335 (CCPA 1977) ("Absent any written description in the specification of quantitative values, arguments based on measurement of a drawing are of little value."); In re Wilson, 312 F.2d 449, 454, 136 USPQ 188, 192 (CCPA 1963) ("Patent

drawings are not working drawings [and arguments are not persuasive when based on a] drawing obviously never intended to show the dimensions of anything.”). Further, the reference that is discussed at the bottom of page 5 of the instant specification is distinguished in terms of difficulties in the manufacturing process, rather than nearness of inner circumferential surfaces of bridge portions with respect to the axial end surfaces of the stator core in the direction of the core’s central axis. Moreover, Adachi teaches stator coils of high density (e.g., at 5 and 8), which seems to be consistent with appellant’s teaching at page 5, lines 11 through 13 of the instant specification, and with the “high density” recited in instant claim 1.

We are thus not persuaded that Adachi fails to teach that the relevant surfaces of the bridge portions are placed “at least close” to the relevant axial end surfaces of the stator core within the meaning of instant claim 1. However, even if we assume that King is necessary to show a teaching of “at least close,” appellant fails to show error in the rejection. In particular, appellant’s briefs do not show error in the examiner’s position as expanded at pages 5 through 7 of the Answer.

Appellant twice refers (Brief at 8; Reply Brief at 2) to the instant specification at page 5, lines 11 through 33 as allegedly teaching that preformed stator coils “such as that disclosed by Adachi” could not be assembled to stator cores “without significant gaps therebetween, without damage to the coils.” The specification section, however, refers to difficulty in the manufacture of high density type apparatus, rather than

distinguishing in terms of the apparatus. Instant claim 1 sets forth an apparatus. The specification section, at best, discloses that damage may occur to an apparatus during its manufacture due to difficulties in the process of manufacture, but does not teach that any manufactured apparatus contains the “significant gaps” as alleged in the briefs.

We disagree with appellant that the King reference’s silence with respect to how the windings are formed constitute a “teaching away” from preformed coils. “A reference may be said to teach away when a person of ordinary skill, upon [examining] the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” Para-Ordnance Mfg. v. SGS Importers Int’l, 73 F.3d 1085, 1090, 37 USPQ2d 1237, 1241 (Fed. Cir. 1995) (quoting In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994)). Appellant does not point out where King may warn the artisan against use of preformed stator coils.

Appellant also alludes to an alleged lack of “reasonable expectation of success” with regard to the combination of Adashi and King. We note that only a reasonable expectation of success, not absolute predictability, is necessary for a conclusion of obviousness. In re Longi, 759 F.2d 887, 897, 225 USPQ 645, 651-52 (Fed. Cir. 1985). Moreover, we observe that a question relating to a “reasonable expectation of success” occurs most often in arts in which there may be more reason to question expectations --

unlike the instant situation where the expectation relates to mechanical and electrical components. The level of predictability in the mechanical and electrical arts is recognized as being relatively high. See, e.g., In re Hogan, 559 F.2d 595, 606, 194 USPQ 527, 537-38 (CCPA 1977) (taking notice of the high level of predictability in mechanical or electrical environments and the lower level of predictability expected in chemical reactions and physiological activity).

We therefore conclude that the evidence provided by the examiner is sufficient to show at least prima facie obviousness of the subject matter as a whole of representative claim 1. The evidence is sufficient to shift the burden to appellant to demonstrate otherwise. As appellant's arguments and the evidence provided by the instant specification do not persuade us of error in the ultimate conclusion of unpatentability, we sustain the § 103 rejection of claims 1 and 4. Because appellant has not submitted arguments in response to the separate § 103 rejection of claims 2 and 3, we sustain the rejection of those claims as well.

CONCLUSION

The rejection of claims 1-4 under 35 U.S.C. § 103 is affirmed.

Appeal No. 2005-1185
Application No. 09/277,198

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). See 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

E. A. H.

ERROL A. KRASS
Administrative Patent Judge

Howard B. Blankenship
HOWARD B. BLANKENSHIP

HOWARD B. BLANKENSHIP
Administrative Patent Judge

BOARD OF PATENT
APPEALS
AND
INTERFERENCES

Mahshid D. Sadat

MAHSHID D. SAADAT
Administrative Patent Judge

Appeal No. 2005-1185
Application No. 09/277,198

SUGHRUE MION ZINN MACPEAK & SEAS
2100 PENNSYLVANIA AVENUE NW
WASHINGTON, DC 20037